

9/3,K/2 (Item 1 from file: 60)  
DIALOG(R)File 60: ANTE: Abstracts in New Tech & Engineer  
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0001223645 IP Accession No: 20080829081  
Air conditioning control system

Jerles, James B  
, USA

Publisher Url: <http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO2&Sect2=HITOFF&u=/netaht ml/PTO/search-adv.htm&r=1&p=1&f=G&l=50&d=PTXT&S1=40 94166.PN.&OS=pn/4094166&RS=PN/4094166>

Document Type: Patent  
Record Type: Abstract  
Language: English  
File Segment: ANTE: Abstracts in New Technologies and Engineering

Abstract:

An air conditioning system having a refrigerant system including a compressor , a condenser coil and fan , and an evaporator coil and fan and including a control system which comprises an electrically operated timer switch for alternately connecting the compressor for a preselected first period of time and disconnecting said compressor for a preselected second period of time, a thermostat for starting the timer when the sensed ambient temperature falls outside a preselected temperature range and for stopping and overriding the timer to disconnect the compressor from the terminals when the ambient temperature falls within the preselected temperature range. The evaporator fan continues to run after the compressor has been turned off thereby continuing to provide additional air cooling without the expenditure of energy to run the compressor .

Descriptors: Compressors ; Timing devices; Coiling; Evaporation; Ambient temperature ; Control systems; Air conditioning; Disengaging; Terminals; Expenditures; Switches; Capacitors; Joining; Thermostats; Air cooling ; Refrigerants  
Identifiers:

9/3,K/6 (Item 2 from file: 103)  
DIALOG(R)File 103: Energy SciTec  
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01467220 EDB-84-165026  
Author(s): Pendergrass, J.C.  
Title: Solar assisted heat pump heating system  
Patent No.: US 4438881  
Patent Date Filed: Filed date 27 Jan 1981

Publication Date: 1984 p v

Language: English

Abstract: A solar assisted heat pump fluid heating system capable of reliable operation at higher than normal ambient temperatures is disclosed. The system includes a collection of solar panels and primary fluid storage tanks having integral coiled heat exchangers interconnected and charged with heat... ..hot refrigerant fluid provides additional heat input when entering working fluid to the heat exchanger is below a predetermined temperature. The heat pump includes an evaporator , compressor and accumulator interconnected in refrigerant flow relationship to provide the hot gas to the heat exchanger. A motor driven evaporator fan circulates ambient air through the evaporator to heat the refrigerant fluid. The heated fluid is then compressed into a superheated refrigerant gas. A modulating control circuit detects fluid temperature of refrigerant leaving the evaporator and controls the fan speed to maintain the fluid within a predetermined temperature range. By restricting ambient air flow through the evaporator , heat pump operation at higher than normal ambient temperatures is possible.

Abstract:

Descriptors: ... AMBIENT TEMPERATURE ; ... ... COMPRESSORS ; ... ...  
EVAPORATORS ;

Descriptors:

Broader Terms: ...SOLAR COOLING SYSTEMS...

Identifiers:

9/3,K/7 (Item 1 from file: 144)

DIALOG(R)File 144: Pascal

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12280555 PASCAL No.: 95-0511724

Temperature and humidity control during cooling and dehumidifying by  
compressor and evaporator fan speed variation

Technical and symposium papers presented at the 1995 winter meeting  
of  
the American Society for Heating, Refrigerating and Air-Conditioning  
Engineers : Chicago IL, January 28 - February 1, 1995

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Concordia univ., dep. mechanical eng., Montreal PQ, Canada  
American Society of Heating, Refrigeration and Air Conditioning  
Engineers  
, Atlanta GA, USA.  
American Society of Heating, Refrigerating and Air-Conditioning  
Engineers. Winter meeting (Chicago IL USA) 1995-01-28  
Journal: ASHRAE transactions, 1995  
, 101 (1) 292-304

Language: English

Temperature and humidity control during cooling and dehumidifying  
by  
compressor and evaporator fan speed variation

The use of speed variation of motors driving evaporator fans and compressors of air-conditioning systems to control environmental temperature and relative humidity has been investigated. The object of the investigation was to experimentally determine the feasibility of such control techniques and to develop a...

English Descriptors: Air conditioning; Temperature regulation; Differential integral proportional regulator; Speed regulation; Compressors ; Evaporators ; Numerical simulation; Control systems

15/3,K/10 (Item 1 from file: 60)  
DIALOG(R)File 60: ANTE: Abstracts in New Tech & Engineer  
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0001153638 IP Accession No: 20080813784  
Fan control circuit for air conditioner

Pearson, Samuel J  
, USA

Publisher Url: <http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO2&Sect2=HITOFF&u=/netacgi/ml/PTO/search-adv.htm&r=1&p=1&f=G&l=50&d=PTXT&S1=41 09482.PN.&OS=pn/4109482&RS=PN/4109482>

Document Type: Patent  
Record Type: Abstract  
Language: English  
File Segment: ANTE: Abstracts in New Technologies and Engineering

#### Abstract:

A control circuit for a room air conditioner includes two temperature sensing devices and an associated switch network which operate to de-energize the evaporator fan upon de-energization of the compressor but, as the temperature of the room air subsequently rises, cause the evaporator fan to be energized prior to re-energization of the compressor. The evaporator housing and temperature sensing devices are arranged such that during operation of the evaporator fan one of the devices senses the temperature of air entering the evaporator while the other senses the temperature of air leaving the evaporator, but during periods when the evaporator fan is off the device which formerly sensed the temperature of air leaving the evaporator operates to sense the temperature of room air.

15/3,K/14 (Item 5 from file: 60)  
DIALOG(R)File 60: ANTE: Abstracts in New Tech & Engineer

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0000646666 IP Accession No: 2008392835

Fan motor on/off control system for a refrigeration appliance

Khanpara, Jatin C; Pickles, Ernest C

, USA

Publisher Url: [http://patft.uspto.gov/netacgi/nph-](http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO2&Sect2=HITOFF&u=/netacgi/PTO/search-adv.htm&r=1&p=1&f=G&l=50&d=PTXT&S1=5918474.PN.&OS=PN/5918474&RS=PN/5918474)

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Document Type: Patent

Record Type: Abstract

Language: English

File Segment: ANTE: Abstracts in New Technologies and Engineering

Abstract:

A refrigeration appliance and control system for efficiently operating the evaporator and condenser fan motors of the refrigeration appliance to reduce the total energy consumed by the appliance are disclosed. The control system operates to turn the evaporator fan motor on only after the evaporator has cooled to its operating temperature to avoid premature and inefficient use of the evaporator fan motor. The control system also permits the evaporator fan motor to continue running after the compressor is turned off to utilize the residual cooling capacity of the evaporator. In an embodiment, a secondary control system also operates to turn a condenser fan motor on only after the condenser reaches its operating temperature and operates to turn the condenser fan motor off only after the compressor is turned off and the condenser cools to a shutoff temperature below its operating temperature. The control systems may operate to delay the normal operation of the evaporator and condenser fan motors to provide for their most efficient use. The delay in operation may be determined by predetermined time intervals with respect to activation and deactivation of the compressor of the refrigeration appliance or may be determined by measuring the temperatures of the evaporator and condenser with appropriate sensors. Methods of operating the refrigeration appliance, and control system for efficient use of the evaporator and condenser fan motors are also disclosed.

17/3,K/9 (Item 2 from file: 60)

DIALOG(R)File 60: ANTE: Abstracts in New Tech & Engineer

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0001142137 IP Accession No: 20080861014

Diagnostics for a heating and cooling system

Bahel, Vijay; Millet, Hank; Hickey, Mickey; Pham, Hung; Herroon, Gregory P; Greschl,

Gerald L

, USA

Publisher Url: <http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO2&Sect2=HITOFF&u=/netaht/ml/PTO/search-adv.htm&r=1&p=1&f=G&l=50&d=PTXT&S1=5623834.PN.&OS=pn/5623834&RS=PN/5623834>

Document Type: Patent

Record Type: Abstract

Language: English

File Segment: ANTE: Abstracts in New Technologies and Engineering  
Diagnostics for a heating and cooling system

Abstract:

Compressor discharge temperature, ambient outdoor air temperature and thermal load are used as control parameters for controlling the expansion valve setting and indoor fan speed. Diagnostics monitor a feedback signal from the fan motor to detect fan over-speed and increased speed due to decreased air flow caused by a dirty indoor air filter. Discharge pressure of the compressor is monitored to detect a blocked outdoor fan. The difference between actual and optimum compressor discharge temperatures and suction pressure of the compressor are monitored to detect a stuck-closed expansion valve or low refrigerant charge. Compressor 'short-cycling' is limited to prevent reduced reliability of the compressor. The difference between compressor discharge temperature and outdoor coil temperature is measured before and after startup to detect compressor failure.

Descriptors: Compressors; Discharge; Outdoor; Diagnostic systems; Indoor; Gas expanders; Control valves; Refrigerants; Failure; Air flow; Monitors; Charge; Heating; Feedback; Cooling systems; Control theory; Control systems; Coiling; Air filters; Millet; Motors; Optimization; Blocking  
Identifiers:

17/3,K/15 (Item 2 from file: 96)

DIALOG(R)File 96: FLUIDEX

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00267801 Fluidex No: 0314893 Subfile: R

Things to know about compressor cooling

WISSENSWERTES UBER DIE KÜHLUNG VON KOMPRESSOREN

Author(s): Ruppelt E.

Drucklufttechnik 3-4 pp 26,28., 1993

Document Available: YES

Record Type: ABSTRACT

Languages: German

Things to know about compressor cooling

Correct thermal design of a compressor begins at the planning stage, and here the maximum ambient temperature should be set at 40 degreesC in central Europe. The fan should be located directly before the cooler, in order to impede settling of dirt particles and to ensure adequate supply of cooling air to the compressor. Periodic cleaning of the cooler is simplified when the cooler can be drawn out of the compressor plant casing, and the compressor station air inlet and outlet ports must be of optimum size and location. (R.Hardbottle)

Descriptors: COOLING SYSTEMS; COMPRESSORS

CLASSIFICATION CODE(S) AND DESCRIPTION: ..FANS/BLOWERS/  
COMPRESSORS )

17/3,K/21 (Item 4 from file: 103)

DIALOG(R)File 103: Energy SciTec

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03555411 EDB-93-134289

Title: Auxiliary outside air refrigeration system

Author(s)/Editor(s): Travers, R.H.

Patent No.: US 5239834 A

Priority No.: US 7-912696

Patent Date Filed: 13 Jul 1992

Publication Date: 31 Aug 1993 ([10] p)

Language: English

Abstract: An auxiliary outside air refrigeration system is described for cooling an enclosure comprising: a conventional refrigeration system operably disposed to cool the air inside the enclosure; a first airflow passage connecting the interior of the enclosure with a source of ambient air; a motorized outside air fan positioned to move cooler air from the exterior of the enclosure through the first airflow passage into the enclosure; a second airflow passage connecting the interior of the enclosure with the exterior of the enclosure to exhaust warmer air from the enclosure; a temperature sensor to sense the temperature of the outside air; a temperature sensor to sense the temperature of the air inside the enclosure; a thermostatic control means in communication with the inside and outside temperature sensors and in electrical communication with the outside air fan whereby the outside air fan is actuated whenever the air inside of the enclosure is warmer than a first pre-determined temperature and the outside atmospheric air is cooler than a first pre-determined number of degrees cooler than the air inside the enclosure; the outside air fan being de-actuated whenever the outside air temperature is warmer than a second predetermined number of degrees cooler than the air temperature inside the enclosure and, a thermostatic control means by which the compressor of the conventional refrigeration system is actuated whenever the temperature of the air inside the enclosure is above a third pre-determined temperature which is warmer than the cut-in temperature of the enclosure for the outside air refrigeration system, such that the compressor does not operate as long as the outside air refrigeration system is effectively cooling the air inside the enclosure.

Abstract:  
 Descriptors: AMBIENT TEMPERATURE ;  
 Descriptors:

? ds

Set	Items	Description
S1	897451	COOL OR COOLS OR COOLING
S2	104847	FAN OR BLOWER
S3	135621	COMPRESSOR? ?
S4	45555	EVAPORATOR? ?
S5	265418	(AMBIEN? OR ENVIRONMENT?? OR OUTSIDE? OR SURROUND???) (5N)T-TEMPERATURE? ?
S6	853	S1 AND S2 AND S3
S7	53	S5 AND S6
S8	11	S4 AND S7
S9	7	RD (unique items)
S10	2611	S3(7N)S2
S11	179	S4 AND S10
S12	4921	TEMPERATURE?(5N)S4
S13	36	S11 AND S12
S14	33	S13 NOT S8
S15	16	RD (unique items)
S16	42	S7 NOT S8 NOT S13
S17	27	RD (unique items)

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